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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,727	06/22/2006	Makoto Yasusaka	40404.41/ko	9932
54068 7590 12/19/2007 ROHM CO., LTD. C/O KEATING & BENNETT, LLP 8180 GREENSBORO DRIVE SUITE 850 MCLEAN, VA 22102			EXAMINER CHENG, DIANA	
			ART UNIT 2816	PAPER NUMBER
			NOTIFICATION DATE 12/19/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JKEATING@KBIPLAW.COM  
uspto@kbiplaw.com

**Office Action Summary**

Application No.

10/596,727

Applicant(s)

YASUSAKA, MAKOTO

Examiner

Diana J. Cheng

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7, 8 and 10-14 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/22/2006, 12/15/2006</u>                                    | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Taneji et al. ((JP 08-191238), as cited in the IDS dated 06/22/2006.**

Re claim 7, Taneji et al. discloses in Fig. 5 a signal output circuit comprising:  
an output transistor of an NPN type bipolar transistor arranged to output an output signal (37);

a ground side output control transistor that turns ON and OFF according to an input signal so that turning ON drops the potential of a base of the output transistor to turn OFF the output transistor, and turning OFF raises the potential of the base of the output transistor to turn ON the output transistor (35);

a base current supply resistive element arranged to supply current from an input power supply to the base of the output transistor (R7);

a power supply side output control transistor located between the base current supply resistive element and the base of the output transistor and arranged to turn ON and OFF in opposite ways as the ground side output control transistor according to the input signal (36);

a ground side current bypass transistor, that turns ON and OFF in the same way as the ground side output control transistor according to the input signal so that turning ON allows current of the base current supply resistive element to flow and turning OFF stops the current of the base current supply resistive element from flowing (34); and

a current limitation resistive element located between the ground side current bypass transistor and the base current supply resistive element (R6).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taneji et al. ((JP 08-191238), as cited in the IDS dated 06/22/2006.**

Re claim 8, Taneji et al. discloses all the limitations of the present invention, but does not disclose further comprising an inversion circuit to which the voltage between the ground side current bypass transistor and the current limitation resistive element is input so as to invert the input voltage to control the power supply side output control transistor. However, transistor 36 is an N-type transistor. It is well known in the art to interchange the N-type transistor with an inverter in series with P-type transistor due to circuit equivalence. Therefore, it would have been obvious to one of ordinary skill in the

art to interchange the N-type transistor with an inverter in series with P-type transistor, for the purpose of using equivalent circuitry for the same functionality.

Re claim 10, Taneji et al. discloses all the limitations of the present invention, but does not disclose, wherein the ground side output control transistor, the power supply side output control transistor and the ground side current bypass transistor are MOS transistors. However, it is well known in the art that BJT transistors are replaceable with MOS transistors due to MOS transistors having characteristics of better handling larger amount of current and smaller size. Therefore, it would have been obvious to one of ordinary skill in the art to exchange the BJT transistors with MOS transistors, for the purpose of decreasing size of the circuitry.

**5. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taneji et al. ((JP 08-191238), as cited in the IDS dated 06/22/2006 as applied to claims 7 and 8 above, and further in view of Applicants Admitted Prior Art (AAPA), Figure 2.**

Re claim 11, Taneji et al. further discloses wherein the base current supply resistive element and the current limitation resistive element are resistors, but does not disclose the second current limitation resistive element.

Applicant's AAPA teaches in Fig. 2 the second current limitation resistive element (26), which is a resistor. Applicant further teaches a signal output circuit 102 that would be equivalent to the circuit taught in Taneji et al.

Therefore, it would have been obvious to one of ordinary skill in the art to use the circuit disclosed in Fig. 5 of Taneji et al. in 102 of Applicant's AAPA, for the purpose of using equivalent circuitry for the same functionality.

Re claims 12, 13, and 14, Taneji et al. discloses all the limitations of the present invention, but does not disclose the resistive elements, the reference voltage generation circuit, and the comparator.

Applicant's AAPA teaches in Fig. 2 the signal output circuit (102), further comprising:

resistive elements connected in series and arranged to divide the power supply voltage (23, 24);

a reference voltage generation circuit arranged to generate the reference voltage (22); and

a comparator (25) arranged to compare the voltage at a mid-point of said resistive elements connected in series (23, 24) and the reference voltage generated by said reference voltage generation circuit ( $V_{ref}$ ) so as to use the comparison output as an input signal of the signal output circuit (102), wherein the output signal of the signal output circuit is output as a power supply voltage monitoring signal (out).

Therefore, it would have been obvious to one of ordinary skill in the art to use the circuit disclosed in Fig. 5 of Taneji et al. in 102 of Applicant's AAPA, for the purpose of using equivalent circuitry for the same functionality.

***Allowable Subject Matter***

6. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Re claim 9, the prior art does not teach or fairly suggest a signal output circuit comprising a second current limitation resistive element connected to the output of said inversion circuit.

***Contact***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diana J. Cheng whose telephone number is (571) 270-1197. The examiner can normally be reached on Monday-Friday, 9 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew N. Richards can be reached on (571) 272-1736. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DJC/  
12/12/2007

A handwritten signature in black ink, appearing to read 'Tuan T. Lam', with a stylized, flowing script.

TUAN T. LAM  
PRIMARY EXAMINER